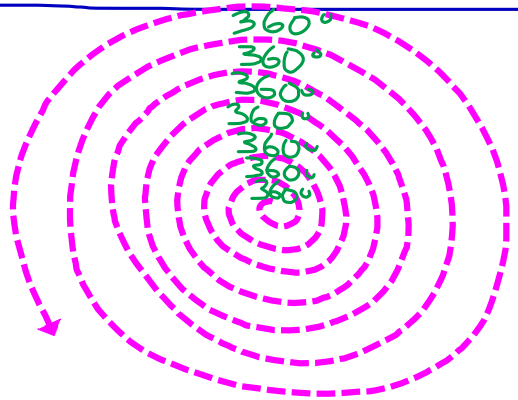
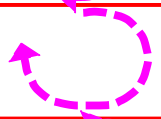
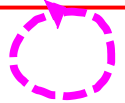
2006 Olympics Snowboarding

Lesson includes long multiplication & division



How many rotations can you achieve?

* each full rotation is 360° (the Babylonians believed that there were 360 days in a year)
* if they used $365\frac{1}{4}°$ for a full rotation, the men would be doing $1095\frac{3}{4}°$
* doesn't sound as cool as a 1080° (3 rotations)

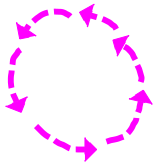
# of Rotations	Degree°	Visual
$\frac{1}{4}$	90°	
$\frac{1}{2}$	180°	
$\frac{3}{4}$	270°	
1	360°	
2	720°	
$2\frac{1}{2}$	900°	
3	1080°	
4	1440°	
5	1800°	
6	2160°	
7	2520°	
8	2880°	

Title: Feb 15 - 1:01 PM (2 of 9)

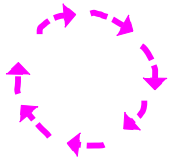
The direction of your turn is

Sometimes relevant

Counterclockwise



clockwise



* 180° turn ends up in the same place no matter which direction you turn.
* it is the same for 360°
* 270° clockwise ends up in the same place as 90° counterclockwise.

Return to long multiplication

* 15 rotations times 360°

Step 1) hold the zero until the end

2) multiply 5 by 6 = 30; put the zero under the 5 and carry the (3) above the 3 of 360

3) multiply 5 times 3 = 15 and add the carry of (3) = 18; put the 8 below the 1 and carry the (1) from 18 to the left of 360 and bring down the (1)

4) put a dash (some people put a zero) under the 0 below the 5 to start.

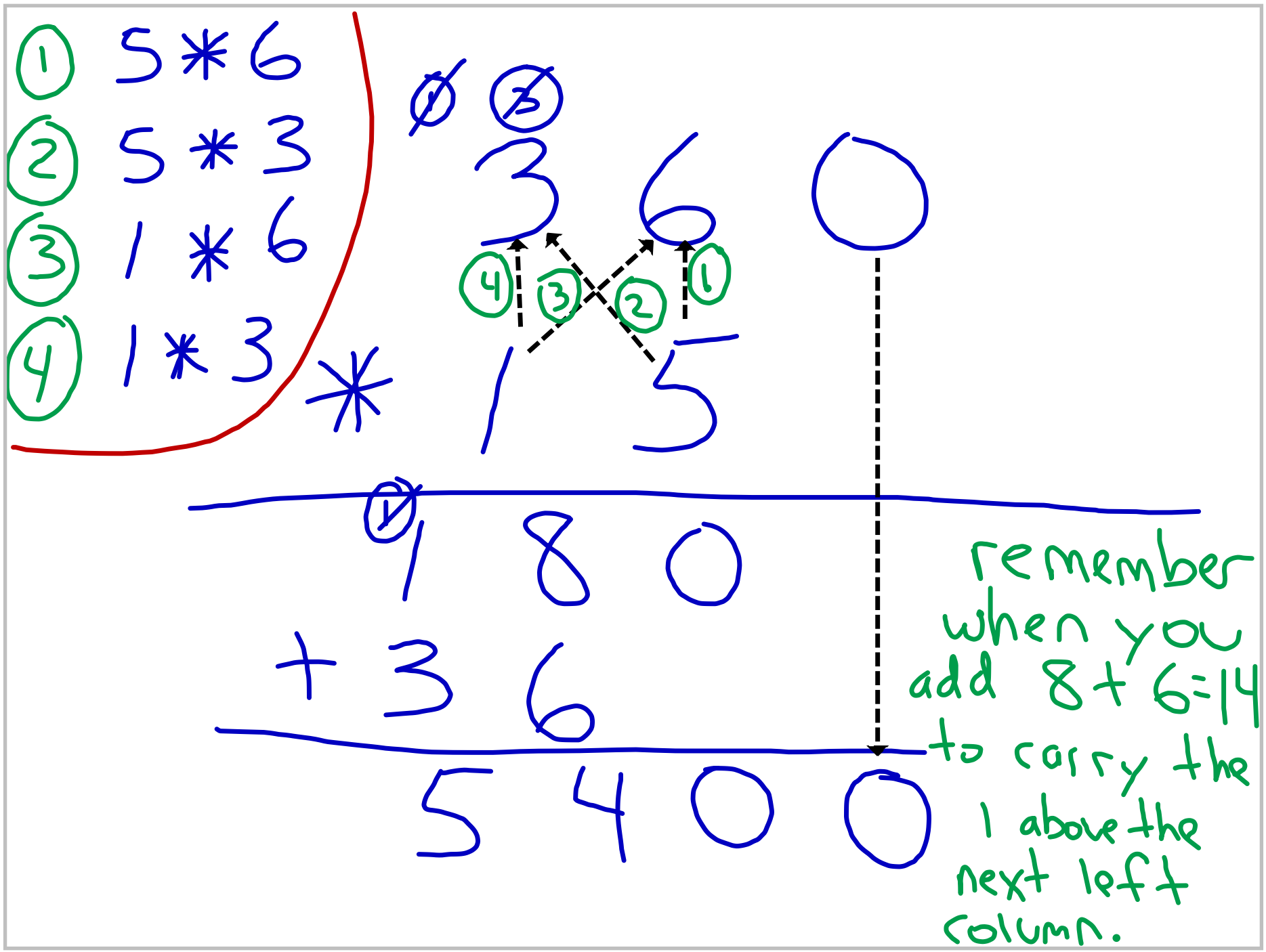
5) multiply the 1 from the 15 by 6 = 6 and put under the 8; then multiply the 1 by 3 = 3 and put under the 1

6) now add the two solutions and bring back the zero to the right of the 540(0)

7) Your answer is 5400°

360
*15
180.
+36-
5,400

(next page uses arrows to explain)



Title: Feb 16 - 9:39 AM (5 of 9)

Practice In the 3006 olympics, snowboarders can do a 900° jump.

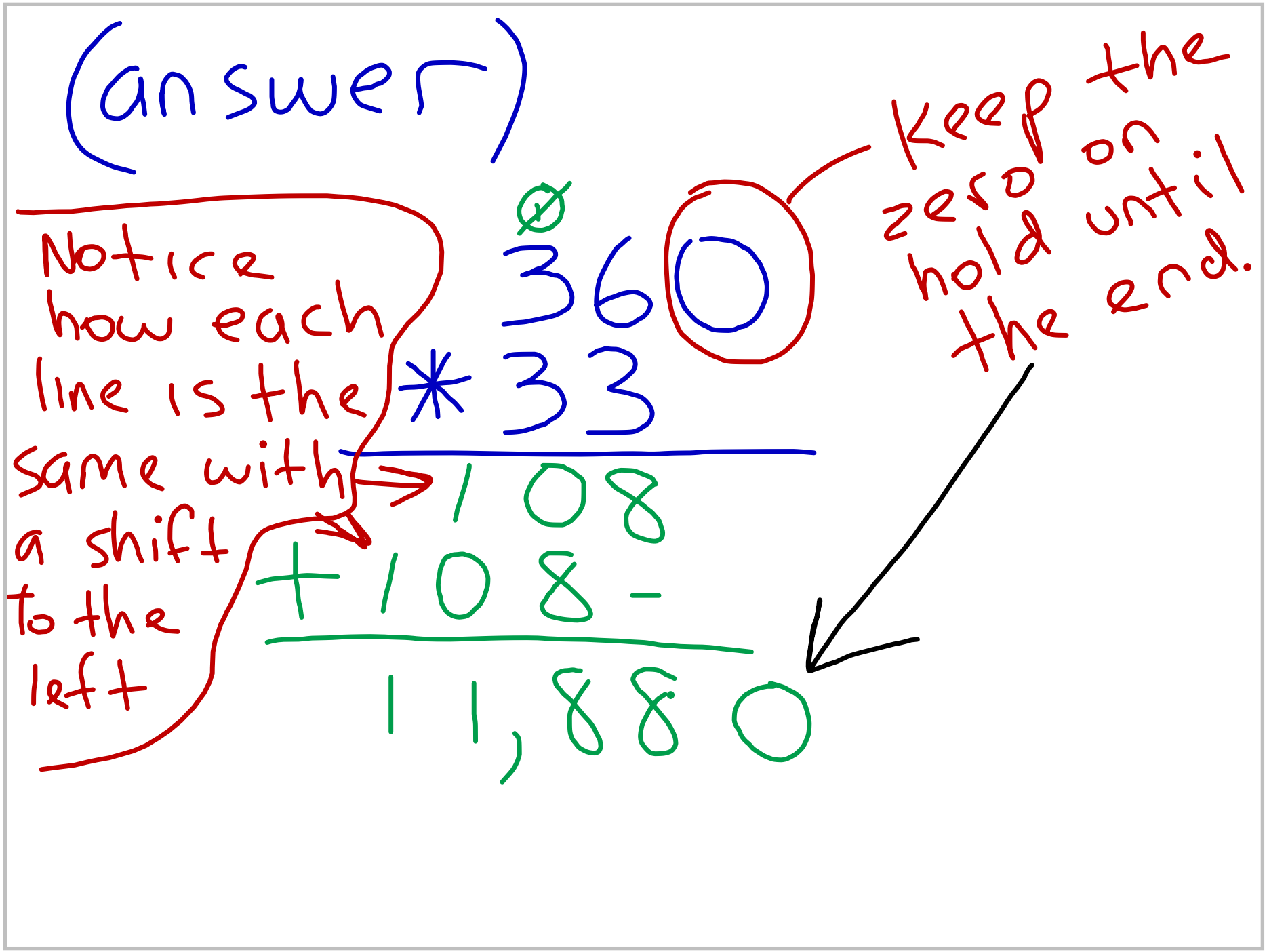
* how many turns is that jump? (answer next page)
* Now, invent your own future olympics and see what degrees you get.

divided by →

$$\frac{900}{360} = 25 \text{ rotations}$$

$$
\begin{array}{r}
25 \\
36\overline{)900} \\
-72 \\
\hline
180 \\
-180 \\
\hline
0
\end{array}
$$

Practice If you can turn 33 times on your snowboard, what is the total degree measure? (key on next pg.)


(answer)
Notice how each line is the same with a shift to the left
360
*33
108
+108-
11,880
Keep the zero on hold until the end.